

tion, had explored in other places on the Amazons, and found fossils in abundance near Cochaquinas, on the south side of the Marañon. "The shells," writes Prof. Orton, "are all found in the coloured plastic clays*, which stretch unbroken from the foot of the Andes to the Atlantic.".... He adds, "The forms are all very singular and unique; and from their extermination, especially of one genus (*Pachydon*) with all its representatives, we infer that the formation cannot be late Tertiary, and may be Miocene.

"The species indicate fresh- or brackish-water life; and the perfect preservation of the most delicate parts, some specimens retaining even the epidermis, shows a quiet lake or estuary. There certainly are no indications of a 'grinding glacier.'" "

Under date of Oct. 10, 1870, Prof. Conrad publishes, "*in advance* of the 'American Journal of Conchology,' descriptions of new fossil shells of the Upper Amazon," some of which had been previously described and figured in the fourth volume of the same journal by Mr. Gabb. Having since had the opportunity of examining many hundreds of these shells sent home by Mr. Hauxwell to Mr. Janson (Museum Street), I venture to append a few notes thereon.

[To be continued.]

MISCELLANEOUS.

Notes on Arctic Zoology. By DR. ROBERT BROWN, M.A., F.R.G.S.
(In a letter to Dr. J. E. GRAY.)

4 Gladstone Terrace, Hope Park, Edinburgh,
November 23, 1870.

MY DEAR SIR,—I am at present working at the distribution of the North-west American faunas and floras, with a view to eventually producing a physical atlas of that region, and therefore venture to trouble you with this note to inquire if you have ever examined the skull of the *Phocæna* from Queen Charlotte's Islands, which the British Museum acquired from my collections; and if so, whether it is identical with any species of porpoise from the Atlantic. I remember that at the time (April 1868) you were inclined to believe that it was identical with *P. communis*. [I can see no difference in the skulls.—J. E. G.] If so, the fact would be rather interesting.

While I am at it, I may as well mention a few facts connected with arctic zoology, which you may find worthy of a notice in the 'Annals.' In a paper of mine on the arctic seals, in the 'Proceedings of the Zoological Society' for 1868, p. 425 (also translated in Petermann's 'Geographische Mittheilungen' for 1869), I discussed

* This is evidently Bed II. of Prof. Agassiz's section.

the species to which a seal called the "ground seal" (probably a corruption of "*grown* seal") belongs, and hazarded an opinion that it might only be *Phoca barbata*, O. Fab. Since that paper was published, through the kindness of Mr. Charles E. Smith, the surgeon of Mr. Lamont's yacht expedition to Spitzbergen in 1869, I have obtained skulls which leave no doubt of the soundness of that opinion. *Phoca barbata* must therefore be classed as an oceanic seal, and one of the species slaughtered by the sealers. *Halichærus gryphus*, O. Fab., I find to be a very common seal in the Hebrides. It is born yellowish white, but begins to get dark on the snout and flippers a day or two after birth. So abundant is this species of seal in the Hebrides that a friend of mine, Capt. McDonald, R.N., in one voyage of a few weeks in one of the fishery cutters, killed seventy. The same gentleman in April 1841 killed a walrus (*Trichechus rosmarus*, Linn.) on the East Heiskar, which adds one more to the recorded instances of this animal's occurrence on the British coasts.

You may remember also that, in a paper on the Greenland mammals, in the same work (Proc. Zool. Soc. 1868, p. 359), I expressed an opinion that the animal which the Greenlanders talk about under the name of "Amarok" was not, as Fabricius supposed, the *Gulo borealis*, Retz., but only the Greenland dog run wild and returned to its pristine condition of the wolf. At that time, however, no specimen of this much-talked-about animal had ever been killed; but the winter after we left the country (1868-69), a communication which I had recently from Greenland informs me that a real wolf (apparently *C. occidentalis* var. *griseo-albus*) had been killed at Godhavn in about 69° 14' N. A whaling captain whom I met last autumn (1869) in Copenhagen had himself seen the skin, and says that it is identical with the wolf found on the opposite shore of Davis Strait. This wolf is quite abundant there, and so troublesome to the natives, that I was informed, when on that coast in 1861, that the natives had been compelled to remove their villages from some quarters where it was very abundant, on account of its destroying their dogs. The wolf killed at Disco Island (Godhavn) in the winter of 1868-69 had probably crossed Davis Strait on the ice; for the winter was a severe one, and the Eskimo about Pond's Bay (on the opposite shore) declared that wolves had that winter been very abundant thereabout. The same very intelligent whaling captain (a man whom I have known many years) reminded me of a fact (which he recalled to my recollection) that I omitted to mention in my papers on the arctic mammalian fauna (which, curiously enough, he had read in Godhavn, in *Greenland*), viz. that not unfrequently the arctic fox (*Vulpes lagopus*, Linn.), is seen, four or five hundred miles from the nearest land, feeding on the carcasses of seals killed by the sealers on the great floes, between Jan Mayen Island and Spitzbergen, in the spring of the year—a habit which it shares with its much more maritime cousin the white bear (*Thalarectos maritimus*, Linn.). Though this plantigrade passes much of its time in the water, yet I need scarcely say that the author of an extraordinary

paper, read to the British Association at Norwich, was vilely hoaxed when he gravely related, as part of his information derived from reliable individuals, that the polar bear will remain so long in the water as to allow of seaweeds growing on its back!

Finally, the recent discovery, by the German Polar Expedition (*vide* the 8th Report of the Bremen Committee recently issued), of the musk-ox (*Ovibos moschatus*, Gm.) in abundance on the east coast of Greenland, in about 75° north latitude, is a very interesting and rather suggestive fact. Hitherto it has only been very sparingly reported from the west coast, and then not south of Wolstenholme Sound, in 76° N. lat. It at one time appears to have been found more abundantly on the shores of Smith's Sound; but there is no evidence whatever to lead to the belief that it does at present live, or ever did live, south of the glaciers of Melville Bay. It thus appears that on both sides of the continent of Greenland the southern range of this huge arctic animal is limited by about 75° or 76° N. latitude.

Perhaps you may consider these notes worthy of preservation.

I have passed most of the autumn in Denmark, and everywhere heard congratulations that your health was again so good as to allow of your continuing your labours, so valuable to science. In this congratulation allow me to most heartily join, and to remain

Yours most faithfully and respectfully,

ROBERT BROWN.

Dr. Gray, F.R.S. &c.

On Recent and Fossil Corals.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,—I see in your November Number the following words by Mr. Kent:—"I may quote this form, again, as evidence bearing out the truth of my assumption, disputed by Mr. Lankester in a previous number of this Magazine, that the Corals of the Palæozoic epoch were equally complex and highly developed with those peopling the existing seas." There has been a little misunderstanding here. So far from having disputed this assumption, I was not aware that Mr. Kent had ever made it before. I will not now discuss it, but merely point out that this assumption, whether justified or not, is not identical with the assumption which I *did* dispute, viz. that the group of corals "had attained the very zenith of its development long before" the Silurian epoch "had commenced its decline." The development of a *group* is not measured by the degree of skeletal complexity attained by one of its subordinate groups.

I am, Gentlemen,

Yours truly,

E. RAY LANKESTER.

Nov. 25, 1870.